REMARKS

Claims 1-31, 33-54 and 56-66 are pending in the application. With this response, claims 52 through 54, and 56, are cancelled and claims 67 through 70 are added. Claims 1-31, 33-51, and 57-70 remain pending in the application for consideration.

It is believed that no fee is required at this time. However, if a fee is required, please charge Deposit Account No. 50-1775 and notify the undersigned of the same.

Reconsideration and allowance of the claims in light of the following remarks, are respectfully requested.

Claim Objections

Claim 56 is objected to because the claim now depends on canceled claim 55. Claim 56 has been cancelled.

Claim Rejections - 35 USC § 112

Claims 1-24, 57, and 58 are rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement.

According to the rejection, the term "release liner" is not described in the specification in a way to reasonably convey to one of skill that the inventors had possession of the claimed invention. The rejection cites the recitation in Applicants' specification of the specific "silicone release liners," as the closest support, but argues that this is insufficient to support the claim language "release liner."

Applicants traverse the rejection on the basis that other release liners are described in Applicants' specification, in addition to the silicone release liners, e.g., the examples show a polyester material used as a release liner.

The recent Office action of 1/06/2005 states that it is still not clear that one of skill would have appreciated that other materials (e.g., polyester, polyethylene, etc.) would be capable of functioning as release liners, and requests that the record be further developed, i.e., evidence should be presented indicating that the materials disclosed in the specification are usable as release liners.

Applicants submit evidence herewith that materials described in Applicants' original specification, in addition to the recited "silicone release liners," were understood to be useful as release liners. Examples 1, 2, and 3, of Applicants' specification recite polyester as a release liner. In addition, the specification at page 18, lines 8 through 10, identifies useful substrates as polymeric films including polyethylene, polyester, and polypropylene. All of these polymeric materials -- polyethylene, polyester, and polypropylene -- were known for use as release liner materials.

As evidence, attached is United States patent number 5,178,924, which, at column 1, lines 25-33, states:

> The state-of-the art in release liner technology for ultra high performance acrylic pressure-sensitive tapes is polyethylene or polypropylene films. These films have been successfully used for many years because they do not require a release coating (e.g., silicones) and can be formulated to possess sufficient stiffness (secant modulus) to support the tape construction through processing, converting, and lamination.

Further, United States patent number 5,445,609, at column 9, lines 43-52:

> Suitable [release] materials include, without limitation, polyesters, polyethylenes, poly(vinyl chloride)s, polypropylenes . . .

Also, United States patent number 6,143,216, at examples 2 and 3, describes the use of a polyester film as a release liner. According to those examples, a heated battery cathode material is pressed between two sheets of polyester. The polyester film is then peeled away from the pressed electrode material.

Rejection Under 35 U.S.C. 103

Carlson in view of Liu et al.

Claims 25-31, 33-46, and 60-66 remain rejected under 35 U.S.C. 103(a), as being unpatentable over Carlson (US 6,488,721) in view of Liu et al. (US 6,159,544).

Claims 25-31, 33-40, 42-46, and 60-66

According to the rejection, the Carlson reference is said to describe elements of Applicants' claims such as cathode material and edge material, but to "not teach that the

cathode and edge layers are coated substantially simultaneously by a die coater having at least two slots." Further according to the rejection, the Liu reference is said to combine with the Carlson reference in that the Liu et al. reference describes a die coater having parallel slots for coating adjacent layers of "different material" on a substrate. According to the rejection, it would have been obvious to use the die coater of Liu et al. to apply the materials of the Carlson reference to form cathode and edge layers.

Applicants maintain the traversal of this rejection for reasons of record. Further, Applicants view the rejection as unfounded in that the specific materials of the references are not sufficiently similar for the references to be combined to result in Applicants' invention of claims 25-31, 33-46, and 60-66. The Liu reference does not suggest coating techniques for the battery materials of Carlson. In particular, the limited types of materials (e.g., at examples (1) and (2)) that the Liu reference describes are not battery materials as described in the Carlson reference; the materials of the Liu reference are low solids aqueous solutions that would not necessarily exhibit coating properties found in the battery materials of Carlson, in particular the cathode material. The Carlson reference relates to battery apparatuses and coated battery materials, while the Liu reference is limited in its details to coating low-solids aqueous solutions. By describing only techniques of coating the low-solids materials of its examples, the Liu reference would not have motivated one of skill to apply the Liu coating techniques to the materials described in the Carlson reference, to prepare a battery apparatus from materials that function as cathode and edge materials in an electrochemical cell.

In particular, the Carlson reference relates to specific battery materials that require specific electrical properties, combined into a construction that performs as an electrochemical cell or battery. Of particular relevance are elements 201 (a cathode) and 301 (edge material). Exemplary cathode materials are described as containing one or more of electroactive metal chalcogenides, conductive polymers, sulfur-containing materials (e.g., electroactive sulfur-containing polymers). Useful edge materials are identified as insulating layers such as xerogel layers; and polymeric, non-porous, insulating layer such as ethylene-propylene containing layers and isocyanate-crosslinked urethane coating layers. Such battery edge and cathode materials (especially the cathode

material) would typically be coated at relatively high solids rates, which would give these materials different coating properties relative to the materials exemplified in the Liu reference. As a result, one of skill in the battery arts would not have been motivated to apply the coating techniques of the Liu reference, in coating the battery materials of Carlson.

Looking more closely at the Liu reference, the only coatings exemplified or specifically described by the Liu reference are glycerol solutions and polyvinyl alcohol (PVA) solutions, at examples (1) and (2).

Example (1) of Liu describes a method of stripe coating two non-polymeric glycerol solutions onto a substrate. These materials are recited to have specific viscosity, density, and surface tension properties. The rejection states that motivation to combine Liu with Carson exists, because Liu "teaches that the coated interfaces are crisper and less ambiguous by virtue of using a slotted die coater." Liu Example (1), though, only provides information about the potential usefulness of coating these quite specific aqueous glycerol solutions, and cannot be said to provide any information or motivation to coat either cathode or edge battery materials that would not necessarily have the same viscosity, density, or surface tension as the Liu glycerol solutions. The Liu Example (1) provides no motivation to use the described coating techniques to coat a cathode material containing an electroactive material such as an electroactive metal chalcogenide conductive polymer, or sulfur-containing materials (e.g., electroactive sulfur-containing polymers), along with a polymer, next to an edge material such as a xerogel layer or a polymeric, non-porous, insulating layer such as ethylene-propylene containing layers and isocyanate-crosslinked urethane coating layers. In short, because the Carlson cathode and edge materials will not be aqueous glycerol solutions and would typically have coating properties that differ from those aqueous glycerol solutions of the Liu example (1), the Liu example (1) would not have motivated one of skill to use the techniques of Liu to coat the battery materials described by Carlson.

Example (2) by Liu relates to 6% aqueous PVA solutions, and not to cathode and edge materials for batteries. Example (2) of Liu also would not have motivated one of skill to use the description of Liu to coat the Carlson battery materials. The two aqueous

PVA solutions are identified as having "the same properties" (see Liu, at column 6, line 52), including recited viscosity, density, and surface tension. These properties of the two PVA solutions would not necessary be the same properties as the Carlson battery materials. Further, unlike Liu's two PVA solutions, a cathode material would not necessarily have the same properties as an edge material (they may have, for example, different chemical components and different solids percentages). Thus, as with example (1), example (2) of Liu provides no motivation to use the techniques of Liu to apply coatings of cathode and edge materials, as claimed.

Other than these examples (1) and (2), the Liu reference does not include any further description of possible types of "different materials" that might be considered useful for coating by the Liu techniques. In the absence of a description or suggestion that the Liu reference could be or should be used to coat the specific battery materials of the Carlson reference, one of skill would not have been motivated to apply the Liu techniques to the Carlson materials to produce a battery as claimed, and the rejection should be withdrawn.

Applicants have added claims 67 through 70 for the Examiner's additional consideration. These claims further specify that the cathode material includes different ingredients than the glycerol and PVA solutions of Liu examples (1) and (2).

Claim 41

In addition to the reasoning presented by Applicants with respect to claims 25-31, 33-40, 42-46, and 60-66, directly above, claim 41 further distinguishes over the cited combination of references in that the Liu reference does not teach or suggest a dual slot extrusion die as recited in claim 41, and, e.g., as shown and described in Applicants' description with respect to figures 2 and 3. The Liu reference very specifically describes only a die that applies liquids from a single orifice (see Liu Figure 1), as opposed to a dual slot as shown, e.g., in Applicants' examples 2 and 3. Thus, the rejection of Applicants' claim 41 is not supported and should be withdrawn.

Song et al. in view of Carlson

Claims 52-54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 6,521,382) in view of Carlson.

These claims are cancelled herewith.

Allowable Subject Matter

Applicants acknowledge with appreciation the Examiner's indication that claims 47-51 and 59 are allowed.

Conclusion

Reconsideration and allowance of the claims, in view of the above amendments and remarks, are respectfully requested.

The Examiner is invited to contact the undersigned, at the Examiner's convenience, should the Examiner have any questions regarding this communication or the present patent application.

Respectfully Submitted,

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